CASE REPORTS

Coexistence of Multiple Myeloma and Paget's Disease of Bone

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Orange

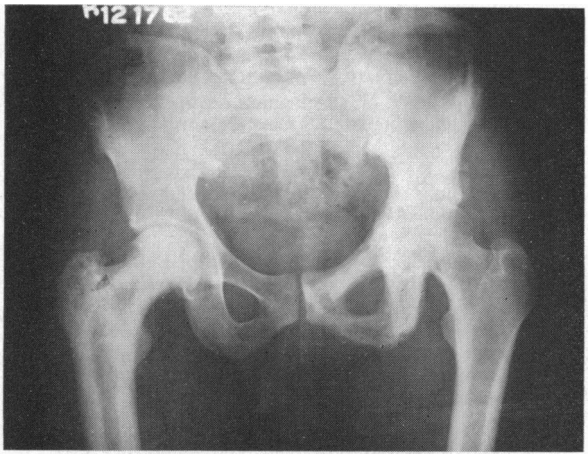

Figure 1.—Posterior-anterior film of pelvis and upper femurs demonstrate classic changes of Paget's disease of bone, expansion of cortex, coarsening of trabeculations and bone sclerosis.

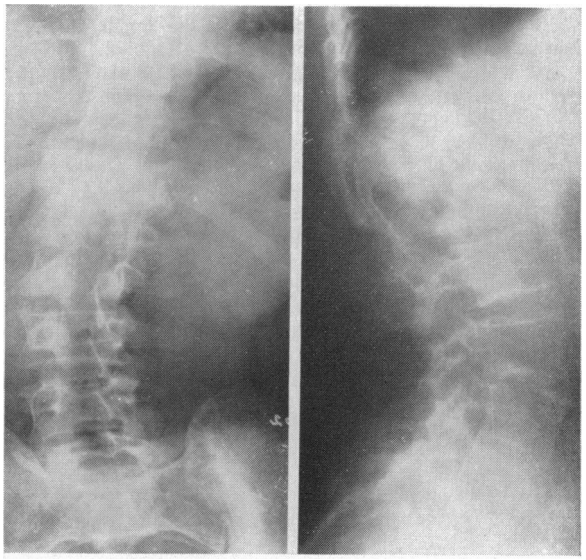

Figure 2.—Posterior-anterior and lateral of spine x-ray films (for discussion, see text).

THE COEXISTENCE of multiple myeloma and Paget's disease of bone is extremely rare. At the Wadsworth General Hospital (Veterans Administration Hospital, West Los Angeles) in the period 1953 through 1961, there were 99 patients with Paget's disease of bone and 85 with multiple myeloma, none with both diseases coexisting. Recently, however, the author studied one patient with both diseases at this hospital.

Report of a Case

A 47-year-old Negro man was admitted for the first time to the Wadsworth General Hospital on December 14, 1962, because of "Paget's disease of bone and high blood pressure." Bilateral hip pain began in May 1962, and was accompanied soon afterward by lower thoracic vertebral pains. On June 15, 1962, roentgenograms demonstrated the classic findings of Paget's disease of bone in the left ilium, left ischium and right femur. Blood studies that had been done in 1942 because of a febrile illness showed no anemia but on many determinations the number of leukocytes varied between 4,000 and 6,000 per cu mm with the proportion of lymphocytes ranging from 52 to 83 per cent. In a specimen of bone marrow aspirate the proportion of lymphocytes was 20 per cent.

On physical examination when admitted to the Wadsworth General Hospital the patient appeared well-developed, well-nourished and younger than his chronological age. He was alert and cooperative and

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stuttered. The blood pressure was 170/100 mm of mercury, the pulse rate 90, body temperature 98.4° F. Optic fundi appeared normal. Some diminution in hearing was noted bilaterally. The lungs were clear to auscultation. The heart was enlarged to the left and a Grade II systolic precordial murmur was heard. The liver, spleen and kidneys were not palpable. There was decided lordosis of the lumbar spine. No bone or joint deformities were noted. No abnormalities were observed on neurological examination.

X-ray films of the chest showed a 20 per cent increase in the transverse diameter of the heart. X-ray studies of the pelvis and femurs demonstrated classical features of Paget's disease (Figure 1). Films of the spine showed narrowing of the bodies of the 11th and 12th thoracic vertebrae, poor definition of the bodies of the 12th thoracic and first lumbar and narrowing of the space between the 12th thoracic vertebra and the lumbar spine (Figure 2). Additional x-ray studies of bones revealed Paget's disease of the left humerus. Radiographic studies of the skull and the gastrointestinal tract showed no abnormalities. Before multiple myeloma was diagnosed, an intravenous pyelogram demonstrated normal kidney outlines and normal excretion of the dye.

Alkaline phosphatase (King-Armstrong units) values were all very high. A trace of protein was found in the first urinalysis, but all determinations thereafter were normal. The thymol turbidity test revealed very high values. Results of direct Coombs tests were positive on two occasions, negative on another. Total serum proteins were elevated, with a reversal of the albumin-globulin ratio. Serum electrophoresis showed a paraproteinemic peak in the gamma area compatible with multiple myeloma. Ultracentrifugation of serum showed less than normal S_{19} macroglobulins. The patient was not anemic, and leukocytes numbered between 4,400 and 8,000 per cu mm, with lymphocytosis always present. The erythrocyte sedimentation rate (Wintrobe) was never over 5 mm in an hour. Protein content of a 48-hour urine specimen was 162 mg. Electrophoresis of the urine showed only albumin. Bone marrow aspirate contained numerous plasma cells, and in some areas atypical plasma cells. As determined by the dye dilution method, the cardiac output was 8.76 liters per minute and the cardiac index was 5.28 liters per minute per square meter of body surface. (Normal values are 5 to 6 liters and 3 to 3.5 liters, respectively). Circulation time was 10 seconds (arm to tongue); venous pressure was 150 mm of water. An electrocardiogram was within normal limits. See Table 1 for a portion of the laboratory data.

A diagnosis of multiple myeloma was made on the basis of a characteristic electrophoretic pattern and a pathologist's report that the bone marrow aspirate showed plasma cells "replace approximately 30 to 40 per cent of marrow and they are immature and atypical."

TABLE 1.—*Laboratory Data*

	Dec. 17 1962	*Feb. 5 1963*
Serum creatinine (mg per 100 ml)	1.0	1.0
Serum phosphorus (mg per 100 ml)	4.3	3.4
Serum calcium (mg per 100 ml)	9.6	10.4
Total serum protein (gm per 100 ml)	8.25	8.6
Albumin (gm per 100 ml)	3.68	3.7
Globulin (gm per 100 ml)	4.57	4.9
Serum uric acid (mg per 100 ml)	6.4	5.8
Thymol turbidity (units)	25	16.7
Alkaline phosphatase (King-Armstrong units)	130	78
Coombs, direct	positive	negative
Urinary Bence-Jones protein	negative	negative
Hemoglobin (gm per 100 ml)	13.9	14.6
Hematocrit (%)	43	43
Leukocytes (per cu mm)	5100	5600
Polymorphonuclears (%)	47	41
Lymphocytes (%)	48	57
Monocytes (%)	2	3
Sedimentation rate (mm per hr, Wintrobe)	2	5

The patient's only complaint during the first few weeks in hospital was of pain in both hips. This pain gradually disappeared, and he became totally asymptomatic and ambulatory. Because of the osteoporosis at the 12th thoracic vertebra, a back brace was fitted. The necessity for ambulation as a part of therapy was emphasized. Testosterone propionate, 50 mg per day intramuscularly, was begun on February 7, 1963, and on February 15 the daily injections were discontinued and 200 mg of depotestosterone was given every two weeks.

The patient was last seen in December 1963, and appeared to be in excellent health although results of bone marrow studies and serum protein determinations remained unchanged.

Review of the Literature

Rosenkrantz and Gluckman[4] reviewed the records of discharged patients from ten city and voluntary hospitals in and about New York City and found only two patients, among 1,955,428, who had both Paget's disease of bone and multiple myeloma. As part of their survey, these investigators reported that from 1949-1952 there were 1,000,000 patients admitted and 1,900,000 general diagnoses made in all Veterans Administration Hospitals. Among these, there were 1,136 patients with Paget's disease of bone and 900 with multiple myeloma. Only two had both diseases. To date the literature contains reports of only nine cases of coexistent Paget's disease of bone and multiple myeloma.[1-6] Of the nine, only six were described in some detail. The patient reported

here is the only Negro and the youngest of those with both diseases. Five of the six patients reported in the literature were male. The diagnosis of Paget's disease of bone was made on radiographic evidence, and multiple myeloma was diagnosed by the usual criteria. The alkaline phosphatase values, which varied from 2.3 to 14.9 Bodansky units in the six cases, were low for Paget's disease of bone alone.

Summary

A 47-year-old Negro man with coexistent multiple myeloma and Paget's disease of bone entered the hospital with complaint only of bilateral hip pain and lower thoracic pain. Soon after hospitalization he became asymptomatic. He was not anemic, but he did have leukopenia and relative lymphocytosis. The erythrocyte sedimentation rate was not increased. Serum electrophoresis showed a peak in the gamma area. The diagnosis of multiple myeloma was confirmed by the bone marrow aspirate. Thymol turbidity measurement was decidedly above normal and the result of a direct Coombs test was positive. Alkaline phosphatase values were elevated. Hypercalcemia and Bence-Jones proteinuria were not present. Kidney function was good. The diagnosis of Paget's disease of bone was made on x-ray evidence. A review of the nine cases in the world literature revealed relatively low alkaline phosphatase values for most. Intramuscular depotestosterone, 200 mg every two weeks, was given and the patient was free of subjective symptoms.

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Cold Agglutinin Disease

A Report of Spontaneous Remission

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IDIOPATHIC COLD AGGLUTININ DISEASE is a very rare process. It is characterized by an extraordinarily high titer of serum cold agglutinins and the unique clinical constellation of Raynaud's phenomenon, chronic hemolytic anemia and hemoglobinuria following exposure to cold. Typically, the patient is a man in the sixth to ninth decade of life.[8] Following sudden although often insignificant exposure to cold, symptoms of acute hemolysis ensue rapidly, with muscle aching, headache, malaise, fever and chills. Hemoglobinuria and acrocyanosis soon follow. Recovery from the hemolytic episode is usually rapid; between attacks the patient may be entirely normal.

Report of a Case

A 40-year-old white carpenter was admitted to the U. S. Army Tripler General Hospital on March 22, 1962, with complaint of weakness and malaise related to severe cryptogenic anemia which had first been discovered in mid-October, 1960. Before this time, the patient had been robust and well; he had worked as a carpenter for many years on outdoor construction projects in cold temperatures often as low as minus 70° F.

The first attack came without premonition one morning while he was working on a highway in northern California. He noted sudden cyanosis of his hands and ears, followed by an alarming and repeated passage of "coffee-black" urine. The patient said that "blood and urine examinations" were performed the following day (which was quite a bit warmer and no abnormalities were noted. Then, within five days hemoglobinuria re-

This material has been reviewed by the Office of The Surgeon General, Department of the Army, and there is no objection to its presentation and/or publication. This review does not imply any indorsement of the opinions advanced or any recommendations of such products as may be named, June 26, 1963.

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